



AGRICULTURE IN GHANA

FACTS AND FIGURES (2009)



Issued By:

MINISTRY OF FOOD AND AGRICULTURE

Statistics, Research and Information Directorate (SRID)

December, 2010



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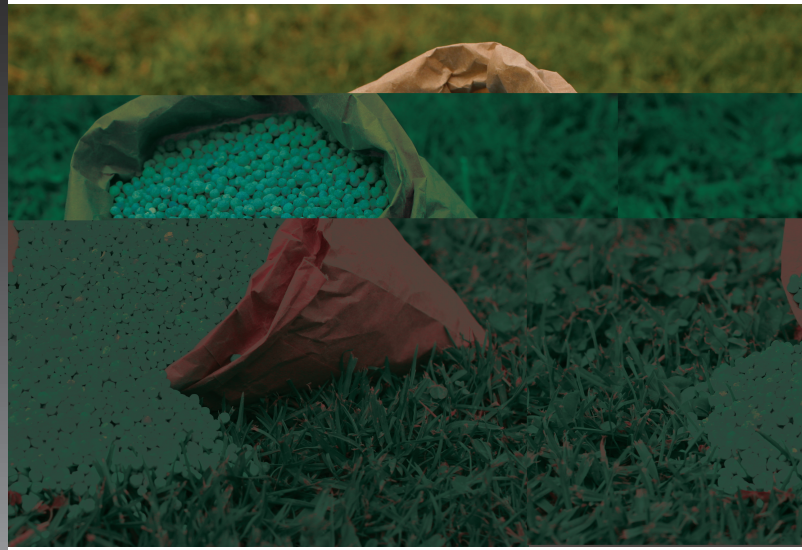
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AGRICULTURE IN GHANA

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Foreword

This handy document, Agriculture in Ghana: Facts and Figures, has been produced by the Statistics, Research and Information Directorate (SRID) of the Ministry of Food and Agriculture (MOFA). This 2009 document is the 19th edition since the commencement of the annual publication in 1991.

It is aimed at providing the salient features of the Ghanaian Agriculture in figures with focus on crops, livestock, fisheries and cocoa sub-sectors. The document also attempts to provide for stakeholders an easy reference on Ghana's agriculture and also its relation to the Ghanaian economy.

The Ministry of Food and Agriculture intends to provide quality, consistent and timely information on the agriculture sector for the formulation of sound development policies and plans so as to improve the efficiency of food production and distribution and thereby raising production, productivity, incomes and ultimately better livelihoods for farmers. It is expected that wider circulation and utilization of the materials and information in the document will assist accelerate the pace of agricultural growth and development in Ghana.

The Ministry of Food and Agriculture welcomes all comments, observations and suggestions that will help improve on the development, publication and dissemination of subsequent editions. These should be sent to:

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Acknowledgement

The Ministry of Food and Agriculture (MOFA), Statistics, Research and Information Directorate (SRID) wish to acknowledge the information and material contributions of the following institutions: Ghana Statistical Service (GSS), Bank of Ghana (BoG), Ghana Export Promotion Council (GEPC), Fisheries Commission (FC), Directorates of MOFA, the Institute of Statistics, Social and Economic Research (ISSER), Town and Country Planning, Ghana Meteorological Agency (GMA) and other Sector Ministries.

The Statistics, Research and Information Directorate (SRID) is also grateful to the Hon. Minister of Food and Agriculture, Mr. Kwesi Ahwoi, the Chief Technical Advisor to the Minister of Food and Agriculture, Dr. Samuel K. Dapaah, for their invaluable comments and suggestions, the Director of SRID, Samuel Oku, for coordinating the production of the document, Messrs James Ayithey, Sidney Nii Oko Bampoe Addo, Godsway Banini, John Nortey and Miss Georgina Nkunu for compilation of information and Mr. Emmanuel T. Opare for providing secretarial services.

Any information sources that have been inadvertently omitted are regretted and due acknowledgement will be made if MOFA's attention is drawn to it.



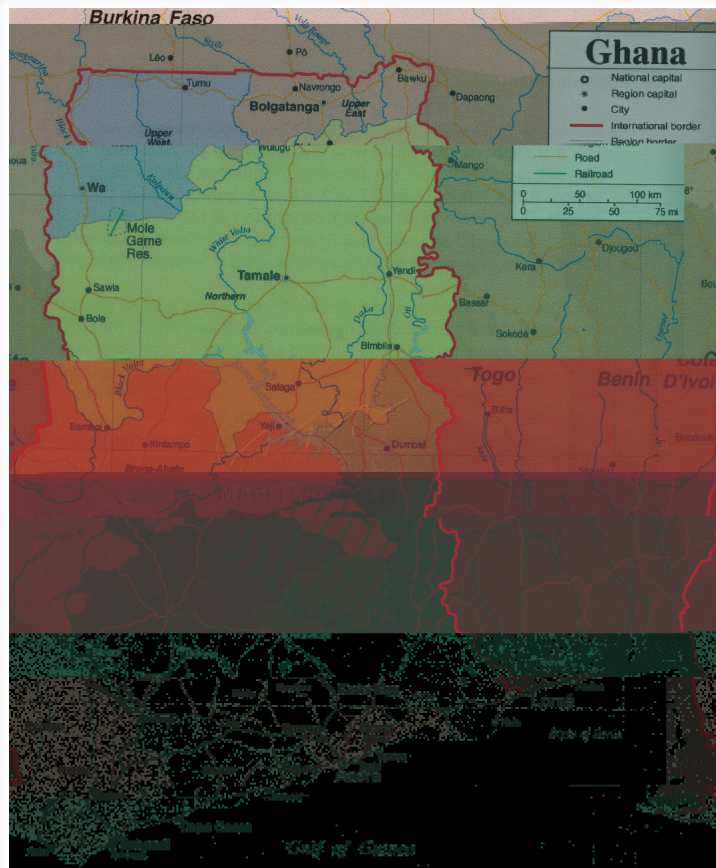


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Agriculture In Ghana

Facts and Figures (2009) at a glance

SECTOR	CONTRIBUTION
AGRICULTURE 	Total Agricultural Land Area: 13,628,179 Ha Area under Cultivation (2009): 7,311,500 Ha Total Area under irrigation (2009): 29,804 Ha Main Sub-sectors: » Crops: Cereals and Starchy Crops » Livestock: Cattle, Sheep, Goats, Pigs, Poultry » Fisheries: Marine, Inland and Aquaculture » Forestry » Cocoa National Real GDP (at Constant 1993 prices): —GH¢827.72million— National Nominal GDP (GDP at current prices): —GH¢21,746.8million— Agricultural Sector's contribution to GDP: 34.5% Real Agricultural GDP Growth Rate: 6.2%
CROPS 	Contribution to Agric GDP: 61.8% Crop Sub-sector GDP Growth Rate: 6.9% Main Crops exported: Yam, Fruits (Banana, Pineapple, Orange), Vegetables (Dried Pepper, Onions/Shallots), Shea Nuts, Cashew Nuts, Kola Nuts
COCOA 	Contribution to Agric GDP: 11.5% *Cocoa Sub-sector GDP Growth Rate: 5.2% Cocoa Production ('000 metric tonnes): 710.6
LIVESTOCK 	Livestock Sub-sector contribution to Agric GDP: 5.0% Main Livestock Produced: Poultry, Cattle, Sheep, Goats and Pigs
FISHERIES 	Contribution to Agric GDP: 12.4% *Fisheries Sub-sector GDP Growth Rate: 4.9% Main Fishery Products Exported: Tuna, Frozen Fish, Dried/Smoked
FORESTRY 	Contribution to Agric GDP: 9.3% *Forestry Sub-sector GDP Growth Rate: 3.7% Main Forestry Products Exported: Timber, Lumber, Game and Wildlife

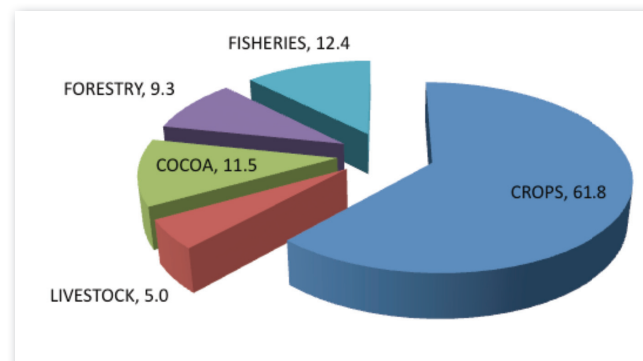
Source: GSS, MOFA (2010)

*GDP Growth Rates are comparison of 2008 and 2009 estimates

1.0 Geographic and Demographic Background of the Country

The Country	: <i>Republic of Ghana.</i>
Capital	: <i>Accra.</i>
Population (2000)	: <i>18.9 Million¹</i>
Population Estimate (2009)	: <i>24.02 Million¹</i>
Population Growth Rate (2009)	: <i>2.7% per annum²</i>
Geographic Location	: <i>Latitude 4°44'N and 11°11'N; Longitude 3°11'W and 1°11'E.</i>
Coastline	: <i>550km long.</i>
Principal Agricultural Exports	: <i>Cocoa, Timber, Horticultural Products, Fish/Sea Foods, Game and Wildlife</i>
Principal Mineral Resources	: <i>Gold, Bauxite and Manganese.</i>

1.1 Agricultural Subsectors by GDP (%)



¹2000 National Population and Housing Census, GSS. 2010 Census ongoing as at the time of this publication

2.0 Land Use, Vegetation, Soils And Climate

2.1 Land Use (Specific to Agriculture)

Type of Land Use	Hectares	%	Explanation
1.0 Total Land Area (T.L.A.)	23,853,800	100.0	
2.0 Agric. Land Area (A.L.A.)	13,628,179	57.1	(2.0/1.0)
2.1 Area under cultivation (2009)	7,311,500	53.6	(2.1/2.0)
2.2 Total area under irrigation (2009)	29,804	0.2	(part of 2.1)
2.3 Area not under cultivation (2009)	6,316,679	46.4	(2.3/2.0)
3.0 Area under inland waters*	1,100,000	8.0	(3.0/1.0)
4.0 Others (forest, woodlands, cities & towns, etc)	9,125,721	38.3	(4.0/1.0)

Source: The Ghana Survey Dept and MOFA, Accra (2010)

*Area under inland waters is excluded from A.L.A.

2.2. Land Use (General)

Land Use	Area ('000 sq.km.)	% of Total
Savanna Woodland	63	26
Bush fallow and other uses	45	19
Unimproved pasture	26	11
Forest reserves	16	7
Tree crops	39	16
Annual crops	33	14
Wildlife reserves	12	5
Unreserved forest	5	2
Total	239	100

Source: MOFA Medium Term Agric. Development Program (1991 revised to 2009).

2.3 Land Area by Region

Region	Area ('000 sq.km.)	% of Total
Northern	70.383	29.51
Brong Ahafo	39.557	16.58
Ashanti	24.390	10.22
Western	23.921	10.03
Volta	20.572	8.62
Eastern	18.915	7.93
Upper West	18.477	7.75
Central	9.881	4.14
Upper East	8.842	3.71
Greater Accra	3.600	1.51
Total	238.538	100.00

Source: The Ghana Survey Dept., Accra (2010)

Land Area by Region (%)

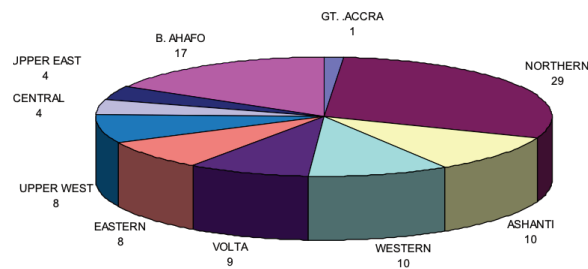


Fig. 1 (Based on Table 2.3)

2.4 Agro-ecological zones:

There are 5 main agro-ecological zones defined on the basis of climate, reflected by the natural vegetation and influenced by the soils. These are Rain Forest, Deciduous Forest, Transitional Zone, Coastal Savanna and Northern Savanna (Guinea and Sudan Savanna).

2.5 Rainfall Distribution by Agro-ecological zones

Agro-ecological Zone	Mean annual Rain (mm)	Growing Period (Days)	
		Major season	Minor season
Rain Forest	2,200	150—160	100
Deciduous Forest	1,500	150—160	90
Transitional	1,300	200—220	60
Coastal	800	100—110	50
Northern Savanna:			
Guinea Savanna	1,100	180—200	*
Sudan Savanna	1,100	150—160	*

Source: Meteorological Services Department, Accra.

*Rainfall distribution is bimodal in the Forest, Transitional and Coastal Zones, giving a major and minor growing season; elsewhere (Guinea Savanna and Sudan Savanna), the unimodal distribution gives a single growing season.

2.6 Climate:

Tropical eastern coastal belt is warm and comparatively dry, the south west corner is hot and humid, the north is hot and dry. Annual average temperatures range from 26.1°C in places near the coast to 28.9°C in the extreme north. Temperatures can however move into the 40°C category. The highest temperatures are recorded in the Upper East Region, specifically at Navrongo (see page 7 for Regional Rainfall figures).

2.7 Topography:

The topography is predominantly undulating, with slopes less than 1%. Even though the slopes are gentle, about 70% of the country is subject to moderate to severe sheet and gully erosion.

2.8 Vegetation

Vegetation Zone	Area ('000 sq.km.)	%
Guinea Savanna Woodland	147.9	62.0
Deciduous Forest:		
- Celtis-Triplochiton Association	37.3	15.6
- Antiaris Chlorophora Association	27.0	11.3
Rain/Deciduous Forest Eco-zone	8.4	3.5
Rain Forest	7.5	3.2
Thicket and Grassland	4.5	1.9
Sudan Savanna Woodland	1.9	0.8
Swamp and Lagoonal Vegetation	1.3	0.6
Others	2.7	1.1
Total	238.5	100.00

Source: Min. of Lands and Forestry, Accra

2.9 Soils :

The soils have predominantly light textured surface horizons in which sandy loams and loams are common. Lower soil horizons have slightly heavier textures varying from coarse sandy loams to clays. Heavier textured soils occur in many valley bottoms and in parts of the Accra Plains. Many soils contain abundant coarse materials either gravel and stone, or concretionary materials which affect their physical properties, particularly their water holding capacity.

2.10 Fertility Status of Soils in Some Regions

Region	Soil pH	% Organic Matter	% Total Nitrogen	Available Phosphorus (mg/kg soil)	Available Calcium (mg/kg soil)
Ashanti					
1. Offinso-Ejura	5.3-7.8	1.5-3.0	0.2-0.3	0.12-12	50-100
2. Kwadaso Juaso, Obuasi	4.3-7.0	1.5-3.0	0.1-0.2	0.12-12	50-100
Western	3.8-7.1	1.03-5.7	0.06-5.4	0.35-11.25	28-420
Brong Ahafo	3.5-6.7	0.34-1.69	n.a	0.12-64.25	16-140.3
Greater Accra	5.4-8.2	0.1-1.7	0.05-0.9	0.8-144	14-470
Upper East	5.1-6.8	1.1-2.5	0.06-0.14	1.75-14.75	43.5-151.5
Upper West	6.0-6.8	0.5-1.3	0.01-0.07	2.0-7.4	52-151.5
Northern	4.5-6.7	0.6-2.0	0.02-0.05	2.5-10.0	45-90

Source: Soil Research Institute, CSIR-Kumasi

n.a.: Not Available

Note: See Appendix 11 for soil-crop suitability map.

2.11 Farming Systems

Agriculture is predominantly on a smallholder basis in Ghana. About 90% of farm holdings are less than 2 hectares in size, although there are some large farms and plantations, particularly for rubber, oil palm and coconut and to a lesser extent, rice, maize and pineapples. Main system of farming is traditional. The hoe and cutlass are the main farming tools. There is little mechanized farming, but bullock farming is practiced in some places, especially in the North. Agricultural production varies with the amount and distribution of rainfall. Soil factors are also important. Most food crop farms are intercropped. Mono cropping is mostly associated with larger-scale commercial farms.

2.12 Regional Rainfall Data In Mm (2001 —2009)

REGION	2001	2002	2003	2004	2005	2006	2007	2008	2009	9-YEAR AV. 2009	30-YEAR AV. 2009	% Change 2009/30-Year Average	% Change 2009/2008
WESTERN	1,235	1,720	1,467	1,248	1,355	1,350	1,678	1,518	1,385	1,440	1,558	(11.1)	(8.8)
CENTRAL	1,156	1,305	1,178	949	1,124	1,462	1,330	1,361	1,195	1,229	1,252	(4.6)	(12.2)
GREATER ACCRA	773	899	908	484	693	689	863	914	805	781	788	2.2	(11.9)
EASTERN	1,150	1,583	1,054	1,174	994	1,410	1,328	1,454	1,211	1,262	1,340	(9.6)	(16.7)
VOLTA	1,027	1,263	1,245	1,215	1,139	1,093	1,195	1,436	1,212	1,203	1,180	2.7	(15.6)
ASHANTI	1,136	1,637	1,326	1,098	1,118	1,384	1,542	1,412	1,380	1,337	1,345	2.6	(2.3)
BRONG AHAF0	1,170	1,311	1,325	1,362	1,244	1,310	1,312	1,366	1,148	1,283	1,244	(7.7)	(16.0)
NORTHERN	880	1,100	1,420	1,178	1,123	1,014	999	1,223	1,292	1,137	1,155	11.9	5.6
UPPER EAST	936	898	1,117	613	791	925	1,320	902	884	932	912	(3.1)	(2.0)
UPPER WEST	968	1,059	1,189	607	897	982	1,089	1,171	1,086	1,005	1,022	6.3	(7.3)
TOTAL	10,431	12,775	12,229	9,928	10,478	11,619	12,656	12,757	11,598	11,608	11,796	(1.0)	(8.7)

Source: Ghana Meteorological Agency

3.0 Farm Population

3.1 Rural Population By Region (2000)

Region	Est. Population (Ghana)		% of Total	Est. Rural Population		*Density (Pers / sq.km) (2009)		
	Total Population (2000)	Annual Growth Rate		Total Rural Population (2000)	% Rural			
Ashanti	3,612,950	3.4	4,881,427	19.1	1,685,405	2,274,745	46.6	200.1
Gt. Accra	2,905,726	4.4	4,281,137	15.4	358,532	526,580	12.3	1,321.3
Eastern	2,106,696	1.4	2,387,500	11.1	1,378,782	1,561,425	65.4	123.6
Western	1,924,577	3.2	2,555,363	10.2	1,226,159	1,627,766	63.7	106.8
Northern	1,820,806	2.8	2,334,542	9.6	1,337,016	1,713,554	73.4	33.2
Brong Ahafo	1,815,408	2.5	2,267,196	9.6	1,136,628	1,419,265	62.6	57.3
Volta	1,635,421	1.9	1,937,302	8.6	1,194,337	1,414,230	73.0	94.2
Central	1,593,823	2.1	1,921,639	8.4	995,418	1,201,024	62.5	195.5
Upper East	920,089	1.1	1,015,292	4.9	775,807	855,890	84.3	114.9
Upper West	576,583	1.7	671,043	3.0	475,735	553,611	82.5	36.3
Total/Average	18,912,079	2.7	24,252,439	100.0	10,637,809	13,148,089	56.2	101.7

Source: Ghana Statistical Services (GS), based on 2000 Population and Housing Census
 *Density (pers./sq.km) for Ghana

3.2 Economically Active Population (15 to 49 Years) By Region and Sex (2000)

Region	Total Labour Force	Agriculture (Farming, Forestry, Fishing & Hunting)				Non-Agriculture (Mining, Manufacturing, Services etc)	
		Count	Share of Labour Force	Percent		Total	
				Male	Female	Male	Female
Ashanti	1,612,467	706,888	43.8	50.0	50.0	905,569	
Gt. Accra	1,377,903	145,034	10.5	55.8	44.2	1,232,869	
Eastern	927,699	531,635	57.3	51.4	48.6	396,064	
Western	856,830	511,826	59.7	52.5	47.5	345,004	
Northern	727,553	523,278	71.2	55.9	44.1	204,275	
Brong-Ahafo	819,190	566,066	69.1	51.1	48.9	253,124	
Volta	697,752	424,458	60.8	49.8	50.2	273,674	
Central	671,003	371,703	55.4	46.5	53.5	299,300	
Upper West	241,209	176,600	73.2	51.4	48.6	64,609	
Upper East	360,508	242,077	67.1	52.9	47.1	118,431	
All Regions	8,292,114	4,199,185	50.6	48.2	51.8	4,092,929	

Source: Ghana Statistical Services (GS), based on 2000 Population and Housing Census

4.0 Agricultural Output

4.1 Crop Sub-Sector

4.1.1 Principal Agricultural Produce

Industrial Crops: Cocoa, Oil Palm, Coconut, Coffee, Cotton, Kola, Rubber.

Starchy and Cereal Staples: Cassava, Cocoyam, Yam, Maize, Rice, Millet, Sorghum, Plantain.

Fruits and Vegetables: Pineapple, Citrus, Banana, Cashew, Pawpaw, Mangoes, Tomato, Pepper, Okro, Egg Plant, Onion, Asian Vegetables.

4.1.2 Area Planted to Selected Food Crops ('000 ha.)

Crop	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Maize	697	695	713	940	792	733	740	793	790	846	954
Millet	186	208	193	198	207	182	185	200	163	182	187
Rice	105	115	135	123	118	119	120	125	109	133	162
Sorghum	312	289	329	337	346	298	305	320	208	276	267
Cassava	640	660	726	794	807	784	750	790	801	840	886
Cocoyam	372	247	262	282	227	270	255	260	258	252	225
Plantain	253	244	265	277	286	281	290	299	305	312	325
Yam	243	261	287	300	321	311	300	325	324	348	379
Total	2,808	2,719	2,910	3,251	3,154	2,978	2,945	3,112	2,958	3,189	3,385

Source: Statistics, Research and Information Directorate (SRID), MoFA

4.1.3 Area Planted to Other Crops (2009)

Crop	Area ('000 sq.km.)
Cocoa	1,600.0
Seed Cotton	18.8
Oil Palm	352.8
Tomato	44.1
Other Vegetables	19.4
Pineapple	9.0
Others (coconut, banana, kola, rubber, tobacco, etc.)	1,882.3
Total	3,926.4

Source: Cocoa, seed cotton, tobacco and oil palm from Secondary data on Industrial Plantations and Agricultural Services Companies. The rest are SRID projections.

4.1.4 Mean Annual Growth Rates for Area Planted to Selected Food Crops

Crop	Average Area ('000HA)		Growth Rate (%) ^a	Average Area ('000HA)		Growth Rate (%) ^a
	1997—1999	2000—2002		2003—2005	2007—2009	
Roots & Tubers:						
Cassava	619.8	727.0	5.32	780.4	842.1	2.54
Cocoyam	265.5	264.0	-0.18	267.1	244.7	-2.92
Yam	213.7	282.8	9.34	310.8	350.0	3.96
Plantain	241.1	262.1	2.79	285.9	342.4	3.13
Cereals:						
Maize	681.7	782.5	4.60	754.9	863.6	4.48
Millet	179.0	199.8	3.66	191.3	177.2	-2.55
Sorghum	322.6	318.3	-0.44	316.4	250.5	-7.78
Rice (Paddy)	117.8	101.5	-4.98	119.0	134.7	4.12
Legumes:						
Groundnuts		285.8		448.8	342.9	-8.77
Beans		141.1		184.6	154.3	-5.98

Source: Based on table 4.1.2 and Appendix 14

Production Indices of Major Cereals

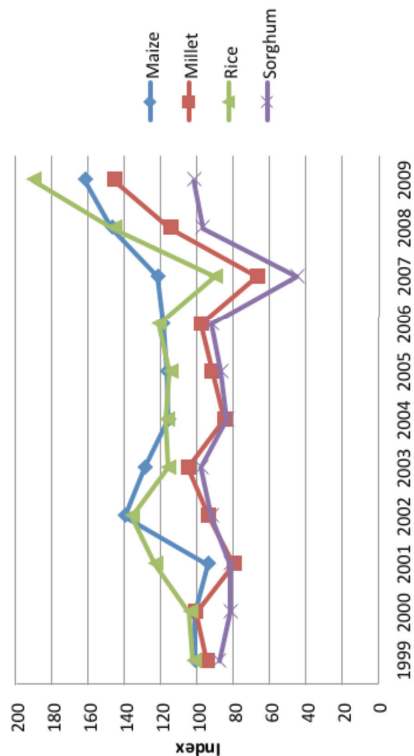


Fig. 2b: Based on Table 4.1.6

4.1.7 Mean Annual Production Growth Rates of Selected Crops

Crop	Average Production ('000 MT)		Growth Rate (%) [*]	Average Production ('000 MT)		Growth Rate (%) [*]
	1997—1999	2000—2002		2003—2005	2007—2009	
Roots & Tubers:						
Cassava	7,338.8	8,934.5	6.56	9,848.2	11,266.5	4.48
Cocoyam	1,604.6	1,724.2	2.40	1,735.5	1,627.5	-2.14
Yam	2,786.6	3,603.2	8.57	3,876.0	5,016.3	8.60
Plantain:	1,925.7	2,095.0	2.81	2,500.3	3,378.0	10.03
Cereals:						
Maize	1,008.5	1,116.9	3.40	1,206.0	1,436.4	5.58
Millet	155.2	154.3	-0.19	158.1	184.1	5.07
Sorghum	330.0	291.9	-4.09	308.0	278.8	-3.32
Rice (Paddy)	229.3	249.3	2.78	239.1	292.9	6.76
Legumes:						
Groundnuts		338.5		416.2	419.0	1.29
Beans		101.3		143.6	167.9	5.20

Source: Based on Table 4.1.5 and Appendix 13

^{*}The average of 2003 to 2005 compared with average of 2007 to 2009 and average of 1997 to 1999 compared with average of 2000 to 2002.

4.1.8 Average Yield of Selected Food Crops Under Rainfed Conditions

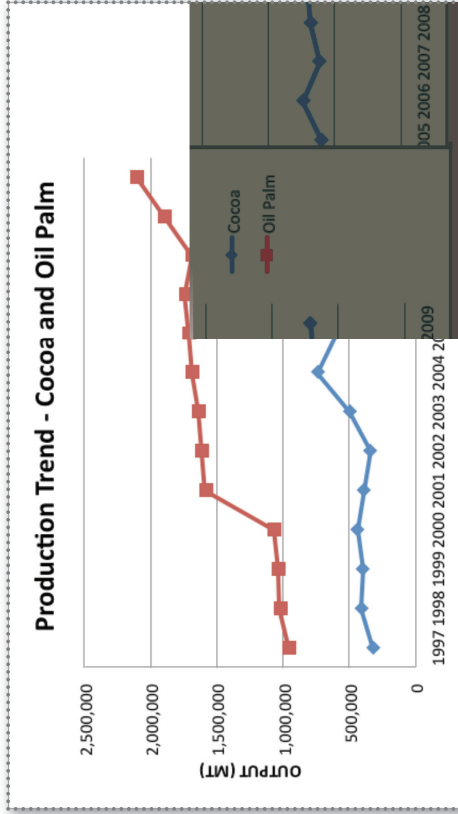
Crop	Average Yield (Mt/Ha) 2009	Achievable Yield (Mt/Ha)
Cassava	13.8	48.7
Plantain	11.0	20.0
Yam	15.3	49.0
Cocoyam	6.7	8.0
Maize	1.7	6.0
Rice (Paddy)	2.4	6.5
Cowpea	1.3	2.6
Soybean	1.5	2.3
Groundnut	1.5	2.5
Millet	1.3	2.0
Sorghum	1.3	2.0
Sweet Potato	8.0	24.0
Taro	9.5	12.0
Cocoa	0.4	1.0
Coffee	1.5	-
Cashew	0.8	1.8
Orange	35.0	-
Pawpaw	45.0	75.0
Mango	11.0	-
Pineapple	50.0	72.0
Cotton	0.8	-
Rubber	0.8	-
Tobacco	1.6	-
Tomato	7.5	15.0
Garden eggs	8.0	15.0
Pepper	6.5	32.3

Note:
Indicates yields that have been achieved in cases where more effective extension and use of recommended technologies have occurred. The dashes indicate crops for which no on-farm research findings were available as far as potential yields were concerned. Data on achievable yields have been revised in line with new findings by the Crop Research Institute.

4.1.9 Estimated Levels of Per Capita Consumption of Selected Food Crops

Commodity	Kg/head/year*					
	1980	1985	1990	1995	2000	2005
Roots & Tubers:						
Cassava	145.2	146.3	148.0	149.7	151.4	152.9
Cocoyam	44.2	43.8	43.3	42.8	42.3	41.9
Yam	-	-	54.0	55.0	56.0	40.0
Plantain:	82.2	82.2	83.0	83.5	84.0	84.8
Cereals:						
Maize	38.4	39.2	40.3	41.4	42.5	43.8
Rice (milled)	12.4	12.7	13.3	13.9	14.5	15.1
Millet	8.5	9.4	5.1	12.6	9.0	6.4
Sorghum	13.0	14.4	9.3	21.7	14.8	10.1
Wheat	-	-	-	-	8.0	8.0
Fish	-	-	23.6	24.2	27.0	30.2
Meat	-	-	8.0	6.3	6.7	7.1

*In the absence of a household consumption survey, these estimates have been based on food available for human consumption from both domestic and import sources. For meat, bush meat consumption of 40,000 Mt and import amounting to 20,000 Mt has been considered. Dashes indicate cells for which information was not available.

Fig. 3.8: *Source: own table 4.1.11*

4.1.12 Projected Cropped Area and Production of Oil Palm

Company	2002		2003		2004		2005		2006		2007		2008		2009*	
	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)	Area (Ha)	Production (Mt)
GOPDC	7.6	91.6	7.6	91.5	10.2	122.3	10.5	126.5	10.9	131.2	7.1	85.4	22.35	268.9	25.0	300.0
BOPP	6.6	90.5	6.5	91	5.7	79.2	6.3	86.3	6.3	87.4	6.1	84.4	6.34	87.7	6.0	82.8
TOPP	8.7	96.1	9.5	104.9	10.3	113.8	10.1	108.7	10	107.7	7.4	81.8	12.24	134.1	15.0	163.5
NOPL Medium Farms	6.1	51.4	6.7	56.6	7.3	62.2	8.1	68.4	8.9	75.3	9.7	82.8	4.00	33.9	6.0	51.0
Other Private Holdings	0.53	4.2	0.57	4.6	0.61	4.9	0.66	5.3	0.71	5.8	0.8	6.3	0.74	5.9	0.8	6.3
TOTAL	285.33	1,612.70	289.17	1,640.10	295.01	1,686.80	298.96	1,712.60	302.91	1,737.90	299.9	1,684.50	337.77	1,896.76	352.8	2,103.6

Source: Data for GOPDC, BOPP and TOPP was provided by ISSER, Legon.
 * NOPL, Medium Scale Mills and Others were SRID projection including 2009 estimates.

4.3 Fisheries Sub-Sector

4.3.1 Annual Fish Production by Source (Mt.)

Source	1997	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Marine	396,000	333,000	380,000	366,000	290,000	331,412	352,405	322,790	315,530	293,398	343,962	318,300
Inland	72,000	88,000	88,000	88,000	88,000	75,450	79,000	82,654	83,168	84,757	72,590	70,898
Total	468,000	422,000	468,000	454,000	378,000	406,862	431,405	405,444	398,698	378,155	416,552	389,198

Source: Directorate of Fisheries, MOFA.

4.3.2 Index of Annual Fish Production (1997 = 100)

Source	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Marine	96	92	73	84	89	82	82	74	87	80
Inland	122	122	122	105	110	106	106	118	121	102

Based on Table 4.3.1

4.3.3 Fish Imports and Exports (2007 – 2009)

Category	2007 (MT)	2008 (MT)	2009 (MT)
Total Fish Imports	212,945	191,657	170,744
Total Fish Exports	N.A.	N.A.	10,369

Source: Fisheries Commission

N.A. = Not Available

5.0 Some Services to Agriculture

5.1 Credit Support

5.1.1 Sectoral Distribution of Credit by Deposit Money Banks

End of Period	Agric Forestry & Fishing	Mining & Quarrying	Manufacturing	Construction	Electricity Gas & Water	Commerce & Finance			Transport & Communication	Services	Miscellaneous
						Import Trade	Export Trade	Domestic Trade			
1997	11.7	5.3	23.1	10.2	1.6	4.6	4.1	24.7	1.6	9.5	3.8
1998	12.2	5.1	24.7	11.2	4.2	5.5	2.0	18.2	2.1	8.7	6.4
1999	12.4	5.7	24.5	9.1	4.2	4.5	3.2	16.8	2.7	9.2	8.1
2000	6.0	3.5	15.0	3.8	2.8	2.8	1.5	8.2	1.7	5.6	4.5
2001	16.8	4.4	21.8	7.7	3.1	4.6	2.6	20.3	3.7	8.6	-
2002	6.5	3.2	15.6	5.5	3.5	4.3	2.2	21.2	4.6	7.1	26.6
2003	0.4	3.2	17.6	5.8	2.5	5.0	2.4	32.4	3.5	15.2	12.5
2004	7.9	2.6	19.4	7.9	2.9	6.9	4.3	19.6	5.4	10.6	12.7
2005	6.4	3.0	20.4	5.7	2.1	7.9	3.0	23.5	4.1	13.6	10.8
2006	6.3	4.4	18.7	6.1	2.5	6.2	2.1	23.9	4.4	17.8	8.2
2008	4.2	2.9	12.3	7.6	4.1	5.2	1.3	25.7	3.2	24.5	9.0
2009	4.5	3.0	9.7	7.0	5.5	4.6	1.5	26.3	3.7	21.7	8.9

Source: Ghana Statistical Service; Quarterly Digest of Statistics and Bank of Ghana.

5.1.2 Bank Lending Rates (Minimum and Maximum) %

End of Period	Agriculture, Forestry & Fishing	Export Sector	Manufacturing Sector
1997	35.00—49.00	35.00—49.00	39.00—49.00
1998	30.00—42.00	31.00—45.00	32.00—45.00
1999	30.00—39.75	31.00—39.75	32.50—40.00
2000	39.00—55.00	39.00—55.00	39.00—55.00
2001	35.00—53.00	35.00—53.00	35.00—53.00
2002	27.00—50.00	27.00—50.00	27.00—50.00
2003	27.50—42.25	27.50—42.25	27.50—42.25
2004	23.50—37.50	23.50—37.50	23.50—37.51
2005	26.00—28.75	26.00—28.75	26.00—28.75
2006	24.25—26.00	24.25—26.00	24.25—26.00
2007	14.83—33.50	15.00—33.50	15.00—33.50
2008	23.75—27.25	23.75—27.25	24.25—27.25
2009	27.09—44.61	29.37—41.25	27.09—39.77

Sources: 1. GSS, Quarterly Digest of Statistics (1997-2002) & 2. Bank of Ghana (2003 to 2009)

5.1.3 Basic Information on Banks in Ghana

NO.	Banking License Category	Year Established	Number of Branches as at 2009	Geographical Distribution of Banks
1.	General Banking License Barclays Banks of Ghana Ltd.	1917	142	All Regions
	Class I Banking License(universal)			
1	Ghana Commercial Bank Ltd.	1953	147	All Regions
2	International Commercial Bank Ltd.	1996	11	4 Regions
3	Metropolitan & Allied Bank (Gh) Ltd.	1995	10	2 Region
4	SG-SSB Bank*	1973	39	All Regions
5	Stanbic Bank	1999	16	3 Regions
6	Standard Chartered Bank Ghana Ltd.	1894	19	5 Regions
7	The Trust Bank Ltd.	1995	16	3 Regions
8	Unibank Ltd.	2000	12	2 Regions
9	AMalgamated Bank Ltd.	1999	11	4 Regions
10	CAL Merchant Bank Ltd.	1990	12	3 Regions
11	ECOBANK Ghana Ltd.	1990	30	5 Regions
12	First Atlantic Merchant Bank Ltd.	1995	4	2 Regions
13	Merchant Bank (Gh) Ltd.	1972	15	5 Regions
14	HFC Bank	2003	11	4 Regions
15	Agricultural Development Bank Ltd.	1965	51	All Regions
16	National Investment Bank Ltd.	1963	25	All Regions
17	Prudential Bank Ltd.	1994	13	3 Regions
18	ARB Apex Bank	2001	10	All Regions
19	Fidelity Bank	2006	8	2 Regions
20	Guaranty Trust Bank	2005	6	3 Regions
21	Intercontinental Bank	2006	14	4 Regions
22	United Bank of Africa	2004	18	3 Regions
23	Zenith Bank (Ghana) Ltd	2005	11	5 Regions
24	Bank of Baroda	2008	1	1 Region
25	Banque Sahelo-Saharienne Pour L'Investissement et le Commerce (BSIC)	2008	2	1 Region

Source: Bank of Ghana

*Formerly known as SSB Bank Ltd.

In addition to the above indicated banks, there are some 116 Rural and Unit Banks operating in the rural and peri-urban setting engaged in deposit mobilization and loan/advances delivery. Again a number of Non-Bank Financial Institutions abound in Ghana. These are helping in various areas in the agricultural sector. For example, of the latter is the Export Finance Company Limited providing the following services:

1. Pre and Post-shipment Credit Schemes
2. Export Refinance Schemes
3. Export Credit Guarantee Scheme
4. Export Insurance Schemes and advisory service

5.2 Agricultural Manpower Development And Research Support

5.2.1 Main Agriculture-Related Research Institutes

Institute	Location	Telephone Numbers	Email/website
Ministry of Food and Agriculture (MOFA)			
Statistics, Research and Information Directorate	Accra	03C2-664317/666727	sridir@gmail.com
Council for Scientific and Industrial Research (CSIR)			
Animal Research	Accra	0302-401846/ 554744/511746	ari@africaonline.com.gh
Crop Research	Kumasi	03220-60389/60391/6/ 60142	cric@africaonline.com.gh www.cropresearch.org
Food Research	Accra	0302-777330/ 761209/ 776897 5001:1/500470/500331	fri@ghana.com
Oil Palm Research	Kade	027-541475/548545/75 0803-610257/8	csir@ghana.com
Water Resources	Accra	0302-775351/ 779514-5/ 7755:1/777170	wri@ghana.com
Cocoa Research	Accra	0302-777161 (Accra Office)	www.cocobod.com
Forestry Research Institute of Ghana	Kumasi	03220-60122-3 / 60370/3	director@csir- forig.org.gh
Soil Research	Kumasi	03220-50353-4/ 50060	soil@aol.com.gh
Savannah Agric. Research Institute (SARI)	Tamale	03720-23197/ 23251/ 24411	sari@africaonline.com.g h
Institute of Industrial Research	Accra	0302-500195/508134-7	info@iir.csir.org.gh, industrialresearch@iir.cs ir.org.gh
Institute for Scientific and Technical Information	Accra	0302-778808/764822	insti@csir.org.gh, jsam@insti.csir.org.gh
Plant Genetic Resources Centre	Bunso	03420-24124/24138	pgrc@libr.ug.edu.gh
Universities			
University Faculties of Agriculture	Accra, Kumasi Cape Coast Tamale	0302-500180, 03220-60361 03321-32709, 03720-23620	www.ug.edu.gh
Department of Zoology, Uni. Of Ghana (UG)	Accra, Legon.	0302-501404	www.ug.edu.gh
Department of Biochemistry, Nutrition and Food Science (UG)	Accra, Legon	0302-500389	www.ug.edu.gh
Ghana Atomic Energy Commission			
Biotechnology and Nuclear Agricultural Research Institute (BNARI)	Kwabinya, Accra	0302-400807/400310/401343 402286	director@bnari.org webmaster@bnari.org

5.2.2 Staffing Levels of MOFA by Profession & Category

Category of Staff	1999	2001	2003	2006	2007	2008	2009
Professional	752	633	738	783	793	1,099	1,099
Sub-Professional	420	529	575	527	530	579	579
Technical	3,139	2,947	3,065	2,816	2,831	2,757	2,757
Support Staff ³	2,842	2,508	2,606	2,175	2,293	2,168	2,168
Total	7,153	6,617	6,984	6,312	6,510	6,603	6,603

Source: Human Resource Development and Management Directorate (HRDM), MOFA

³Support staff includes administrative staff and secretaries



5.3 Agricultural Mechanization

5.3.1 Agricultural Machinery and Equipments

Year	Importation	
	Make/ Model	Qty Imported (Units)
2004	Farmtrac-70 tractors	200
2005	Farmtrac-70 tractors	350
	Farmtrac-80 (2x4) tractors	50
2006	Farmtrac-70 tractors	350
	Farmtrac-80 (2x4) tractors	50
	Rotary slashers	100
2007	Farmtrac-60 tractors	230
	Farmtrac-80 (2x4) tractors	76
	Maize Shellers	220
	Yukon compact tractors	120
	Vari mini systems	250
	Hurricane slashers	50
	Adela slashers	750
2008	Shakti power tillers	200
	John deere tractors	500
	Mahindra tractors	232
2009	Farmtrac-60 tractors	200
	Kukje Combine harvester	12
	Foton combine harvester (D200)	5
	Foton maize/rice combine harvester	10
2010	China run Yuan Gin Ying Combine Harvester	10
	Thailand Combine Harvester (KT09 Rice Harvester)	2
Japanese Grant Assistance-2KR programme		
2006	Landini tractors	40
	Same tractors	10
	Rice Mills	10
	Water pumps	79
2007	Power tillers	100
2008	Kubota tractors	78
	Water pumps	16
	Rice Mills	20

Source: Agricultural Engineering Services Directorate, MOFA

5.3.2 Total Area Under Irrigation (2009) HA

	Area (ha)
Formal Irrigation	
Scheme/Project	
Existing Irrigation Scheme	10,067
Additional Area after rehabilitation	500
Small Scale Irrigation Development Project	1,279
Small Farms Irrigation Project	322
Surface Water Extraction	0
Ground Water Extraction	0
MCA	0
Sub-Total	12,168
Informal Irrigation	
Area Under Cultivation	17,636
Grand Total	29,804

Source: Ghana Irrigation Development Authority, MOFA

6.0 Some Agro-Processing Firms

Name	Product	Location	Contacts
Pastry and Confectionery Products			
Elsa Foods Ltd	Process Local Food into Flour Products	Kpone Near Tema P.O. Box 7565, Accra	Mrs. Elizabeth Maldini Tel: 0244257239 Email: elsafoodsgh@gmail. Com
Vincom Processing Ltd	Production of Various Type of Biscuits & Confectionery	Accra P.O. Box 5558, North Kaneshie	Mr. Sobi Mob.: 027786088E 030281200-3
Cocoa Products and Preparations			
Philio Delio Smile Food	Cocoa Beverage	Tesano, Behind Tesano Sports Club, Near Mizpa Int. School	Philomena Yaa Asantewaa Debrah, P.O. Box 19205, Accra-North Email: philiodelio@yahoo. com 0302234703, 0302667249, 0208127757, 0242167759
Tik-Tak	Cocoa Beverage	Odorkor No.1, Odorkor Light Industrial Area, Opp. Tipper Junction, Accra North	0302323471 0244264780
Fish and Sea Food			
Ghana Agro Foods Company (GAFCO)	Mfg of Canned Fish, Vegetable Oil, Cassava chips, wheat flour, feed etc.	Tema	Mr. Erasmus Twentor (HRM), P.O. Box 113345, Tema Tel: 0303204121-4
Fruits and Vegetables			
Akua Mansah Dansoman Ent.	Fruit Juice Production	Near Agya Pa Ye, North Kaneshie- Fadama Rd., Assemblies of God	Mr.Adjei Darko-MD 0242-148462 P.O. Box GT 498, Accra Email: fuji2kus@yahoo.com
Bella Ind.	Fruit Juice Production	New Legon Estates	Mr. Daniel Pappoe (MD) P.O. Box 2435, Osu-Accra Email: danpap11@yahoo.com Tel: 0244-789794

Name	Product	Location	Contacts
Fruito foods Processing Ltd. (New) (Christview Ltd.)	Fruit Juice Production	Hse No. 50/B495, Sowutuom,b/4 Pentecost Uni-junction	Mr. James Amo Anokye 0244-877446,0302- 226557,0243-473857, P. O. Box NT85 Accra New-Town
Cocks Co. Ltd.	Fruit Juice Production	Hse. No. K9, Motorway Residential Area	Godwin Semanu Tel: 0202905252 P.O. Box AN5038, Accra-North 0202-001336, 0303-303426 Email: info@cocksjuices.com ransahaddo@yahoo.com
Gabrho Ltd.	Fruit Juice Production	14 6f11 Rd, Tesano	Paul Mensah, Box GP17811, Accra Samuel Godwin Eshun(MD) 0302234769/0244267043, 0244371121
Jubilee Industrial Complex	Fruit Juice Production	North Kaneshie Swan lake Near Fairborn	Robert Adjei (MD) 020- 8176141, P. O. Box GP948, Accra drakgh@yahoo.com
Kies-Maddox Enl.	Fruit Juice Production	Opp. Prince Boateng School, Nsawam GCB, Turn right & ask	Mr. Wontumi-MD 020-8140828
Safrex Co. Ltd	Fruit Juice Production	Near Timber Market Roundabout, behind AMAL Bank	Emmanuel Eboasaah Abekah 0303-208803,0277- 434128, 0243-366652, P. O. Box SC 42, Tema
N & C Food	Fruit Juice Production	Plot 1-20 Indus. Area Essuehyia, Ekumfi	Mr. Nat Welbeck (CEO) 0264837144 P.O. Box CT1076, Cantonments-Accra Email : ncfoodtl@yahoo.com Andrew Aact (Special Asst.) 0249623502
Nourisher Processing Ltd.	Fruit Juice Production	North Industrial Area, near old Melcom, 45 Dadeban Road	Mr. Yeboah 0244612958 P.O. Box AN6095 Accra-North

Name	Product	Location	Contacts
Prospects Consortium Ltd.	Fruit Juice Production	Shop No. T6167, Gial Weija	Mr. Adotey 0244-444405,0302-221839, P. O. Box GP 3459, Accra
Promotra Foods Ltd.	Fruit Juice Production	GICEL Estates, Weija (B161), near DVLA	Eric Papafio (MD) 0244-663109
Royal Oasis Ghana Ltd.	Fruit Juice Production	Lapaz Motorway Extension near Ashawo Market	Abraham Hayfron 0264811418 021-413189, 021-406407, P. O. Box KN 661, Accra
Stay Sweet Sugar Ltd	Fruit Juice Production	Behind Memory Guest House, Near Agona District Assembly Office, Swedru	Major Sam-MD, 0244-715931 0302-221798, 020-8138249, P. O. Box AN16731, Accra-North
Blue Sky Products (Ghana) Ltd	Processing of Fresh Exotic Fruits	Ankwa Dobro, near Amasaman	Ruth Smith-Adjei 0244329344 P.O. Box CT 3506 Cantonments-Accra Email: ruth@blueskyproducts. Com
Spring wave Investment Ltd.	Fruit Juice Production	Near Goil Filling Station Adenta	Vivian Adiku P.O. Box 14140, Dansoman-Accra 0244-667073 John Agbenyegah (Asst.) 0248532612

Name	Product	Location	Contacts
Oil Processed Products			
Norpalm Ghana Ltd.	Processing of Palm Fruits into Palm Oil and other related products	Sese near Prestea, Western Region	Managing Director 0244-651840 Fax: 0277-451837
Ghana Oil Palm Development Company (GOPDC)	Palm Oil	Kwae via Kade, Eastern Region Plot No.MS 3, Main Harbour Road, Tema	Managing Director 0244-330090, 0303204150, 0303204151 P.O. Box M-428, Accra Fax: 03429-22383, 0303202670
Twifo Oil Palm Plantation (TOPP) Ltd.	Palm Oil	Twifo Ntafrewaso, Cape Coast, Central Region	Managing Director P.O. Box 138, Cape Coast Tel: 03322-28180/28181-2 Fax: 0332132702 Swanmill, Box M-390, Accra Tel: 0302664833/664985, Fax: 0302662969
Benso Oil Palm Plantation (BOPP) Ltd.	Palm Oil	Benso, Western Region	Managing Director P.O. Box 470, Takoradi Tel: 0312024119 Fax: 0312021683
Juaben Oil Mills Ltd.	Palm Oil	Juaben, Ashanti Region	Managing Director Tel: 0244887200
Ayiem Oil Mills Ltd.	Palm Oil	Ayiem, Western Region	Managing Director AR 62, Airport Ridge P.O. Box 865, Takoradi Tel: 0243688123, 0244573168

Source: Ghana Investment Promotion Centre, Accra and Food and Drugs Board



Table 8.2 (cont'd)

2004	40.3	32.6	27.2	622.35
2005	39.5	32.9	27.6	658.87
2006	39.3	32.9	25.9	701.24
2007	34.3	31.2	25.7	741.21
2008	33.9	31.8	25.6	794.82
2009	34.5	32.3	24.9	827.72

Source: Ghana Statistical Service, Accra

Note: Figures won't add up to 100 where the proportion of Net Indirect Taxes has been deducted.

8.3 Agriculture and Other Sector Real GDP Growth Rates (%)

Year	Sector			National
	Agriculture	Services	Industry	
1997	4.3	6.5	6.4	4.2
1998	5.1	6.0	3.2	4.7
1999	3.9	5.0	4.9	4.4
2000	2.1	5.4	3.8	3.7
2001	4.0	5.1	2.9	4.2
2002	4.4	4.7	4.7	4.5
2003	6.1	4.7	5.1	5.2
2004	7.5	4.7	4.8	5.8
2005	4.5	5.4	7.7	5.8
2006	4.5	6.5	9.5	6.2
2007	4.3	8.2	7.4	6.3
2008	5.1	9.3	8.1	7.3
2009	6.2	4.6	3.8	4.7

Source: Budget Statement and Economic Policy of the Government of Ghana and Ghana Statistical Service.

8.4 Growth Rates in Agricultural Sub-sectors (%)

Year	Sub-sector			National Agric. Real GDP Growth Rate
	Crops/Livestock	Cocoa	Fisheries	
1997	4.5	4.0	1.0	4.3
1998	4.4	11.0	1.8	5.1
1999	4.7	-0.5	1.0	3.9
2000	1.1	6.2	1.6	2.1
2001	4.6	-1.0	2.0	4.0
2002	5.2	-0.5	2.8	4.4
2003	5.3	16.4	3.0	6.1
2004	5.4	29.9	3.5	7.5
2005	3.3	13.2	-1.2	4.1
2006	3.5	2.0	15.0	4.5
2007	4.0	6.5	5.0	4.3
2008	5.8	5.0	3.0	5.1
2009	6.9	5.2	4.9	6.2

Source: Budget Statement and Economic Policy of the Government of Ghana and Ghana Statistical Service

8.5 Share of MoFA Budget in Government Budget. (in Million GH Cedis)

Expenditure Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total Central Gov't Expenditure	329.54	1307.38	1544.70	1,044.70	1051.32	1269.38	1,791.20	5,624.59*	8,009.53*	8,345.5*
Total Expenditure on Agriculture:	5.78	6.25	12.70	13.67	14.27	20.98	25.69	72.79	126.68	165.01
Development Expenditure	2.23	1.85	6.14	2.14	3.82	9.68	11.96	14.42	68.31	89.63
Recurrent Expenditure	3.55	4.40	6.56	11.53	10.45	11.30	13.73	58.37	58.37	75.38
Total Expenditure on Agriculture (%)	1.75	0.48	0.82	1.30	1.36	1.65	1.43	1.29	1.58	1.98

Sources: Budget Division, Accra, and Ghana Statistical Service, Accra.

**Bank of Ghana*

8.6 Recent Performance of Non-Traditional Agricultural Exports

Items	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Total Volume of Non-Traditional Agric. Exports ('000 MT)	-	-	-	-	-	415.8	399.8	316.6	356.5	293.2
Value of non-traditional agricultural exports in US \$m	74.5	67.3	85.7	138.1	159.8	151.9	203.4	197.3	196.8	150.9
Total Value of all non-traditional Exports US \$m.	400.7	418.3	504.3	588.9	705.4	777.6	892.9	1,164.5	1,341.0	1,215.0
Contribution(%) of non-traditional agricultural exports	18.6	16.1	17.0	23.5	22.7	19.5	22.8	16.9	14.7	12.4

Source: Ghana Export Promotion Council, Accra.

8.12 Agro-chemical Imports (MT)

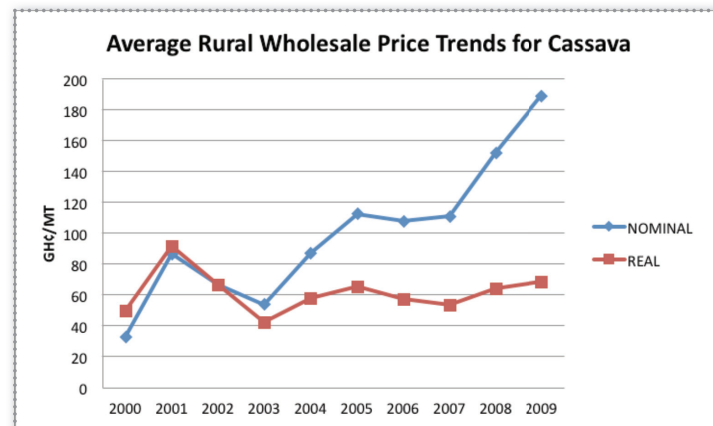
Type of Agro-chemical	Year									
	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Insecticide	1,195	907	1,090	5,829	610	5,982	6,921	9,979	5,121	5,078
Fungicide	673	618	1,345	1,673	770	1,713	2,148	2,575	2,767	1,248
Herbicide	224	598	582	2,472	1,096	5,340	8,780	8,932	10,835	4,525
Rodenticide	257	384	563	159	n.a.	13	78	123	n.a.	1,187
Total	2,349	2,507	3,580	10,133	2,476	13,048	17,927	21,609	18,723	12,038

Source: Ghana Statistical Service (GSS), Accra.

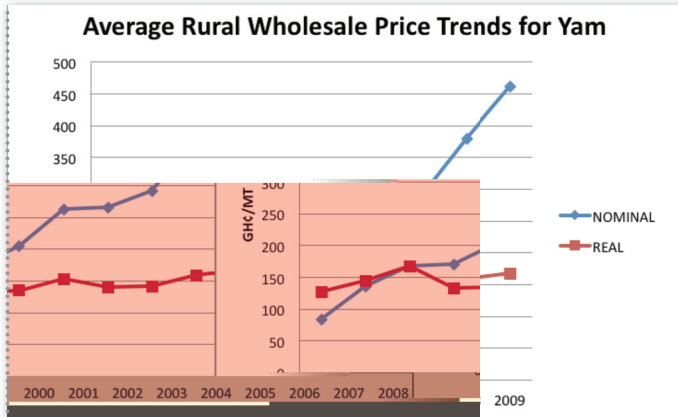
n.a.-Not Available or cannot be estimated.

Appendices

Appendix 1

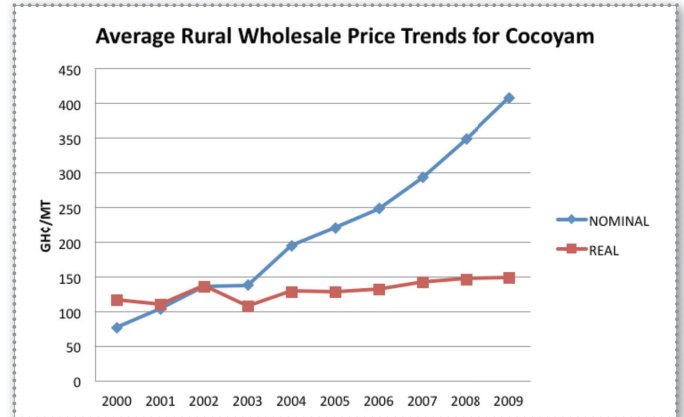


Appendix 2

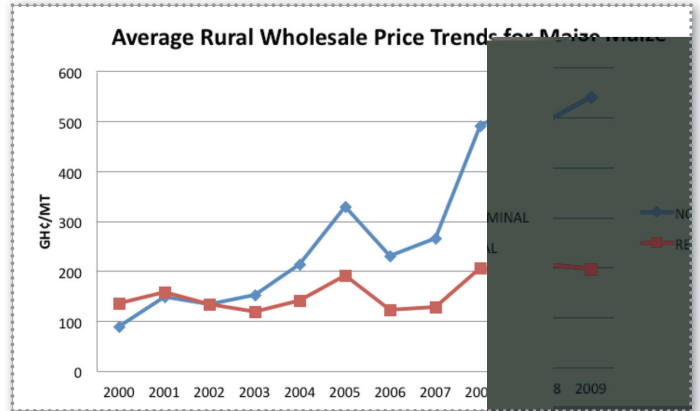


Appendix 3

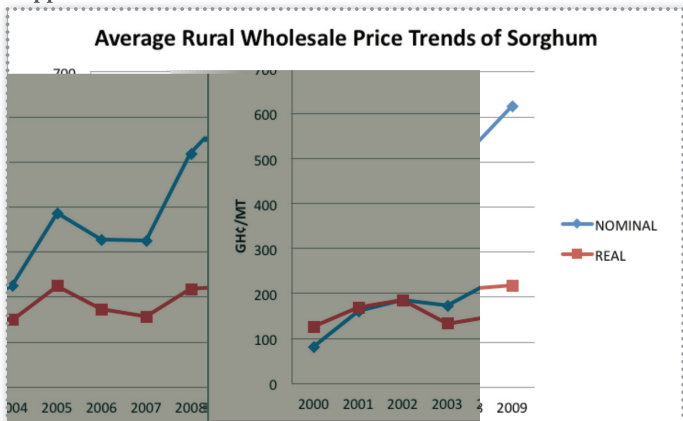
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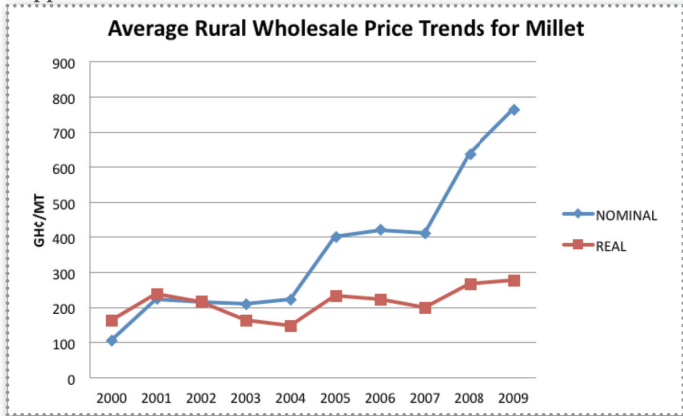
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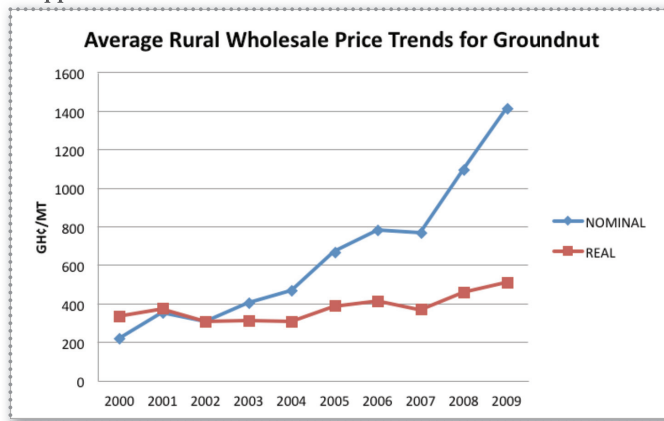
Appendix 6



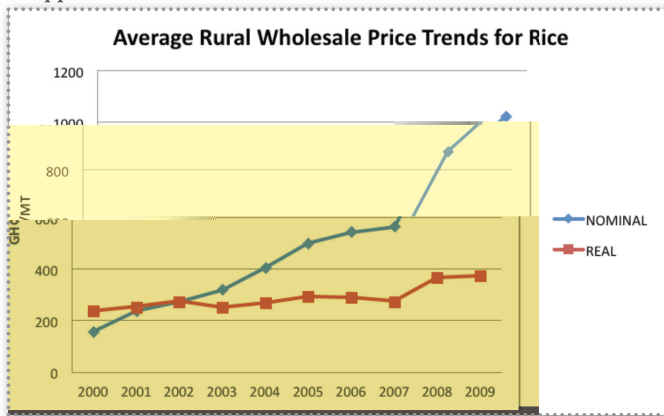
Appendix 7



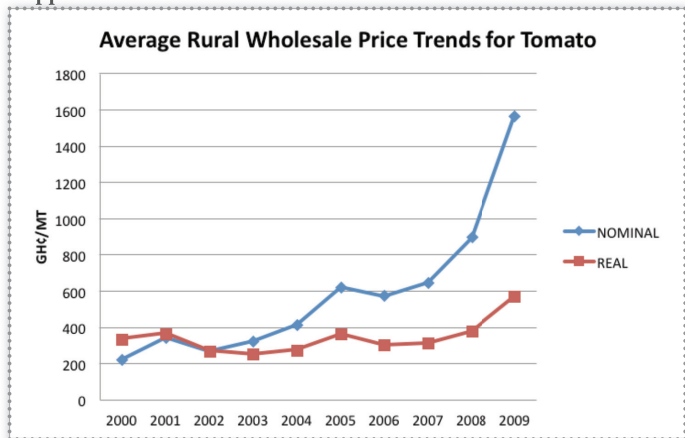
Appendix 8



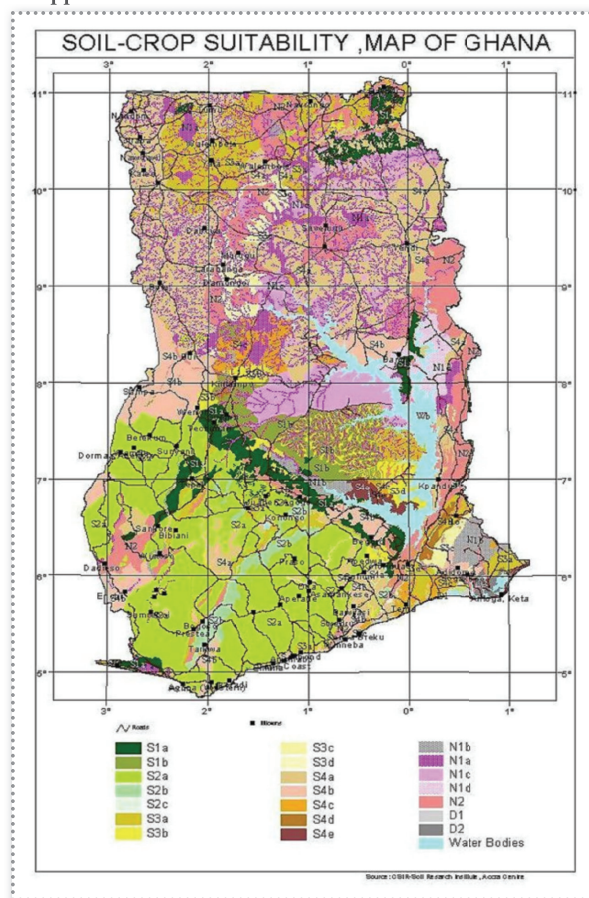
Appendix 9



Appendix 10



Appendix 11



LEGEND

- | | | | |
|--|---|--|---|
| <p>S1 Highly suitable areas for extensive mechanized cultivation of export and food crops, (cashew nut, sunflower, pineapples, maize corn, guinea corn, soybean, cassava, yam, cocoyam, plantain, beans etc.).</p> | <p>S2b Crop suitability same as S2a above. Limitation to crop production may be due to either light or heavy textured soils.</p> | <p>S4b Soils may occur on upland or undulating of very steep slopes. Problem of soil erosion is predominant.</p> | <p>N1c Terrace derived soils, which contain surface pebbles and an undurated subsoil horizon. Soils may be left to prevailing grass vegetation for rough grazing of livestock.</p> |
| <p>S1a Highly suitable soils, non-gravelly medium to moderately heavy textured. Suitable for cocoa, coffee, black pepper, sweet berry, ginger, citrus, cocoyam, banana, rice, sugarcane and vegetables.</p> | <p>S3 Fairly suitable areas for the cultivation of crops such as maize, cassava, vegetables etc.</p> | <p>S4c Soil may be imperfectly drained sands to loamy sands developed over beach sand or may have clay pan beneath the topsoil. Sandy areas may be used for groundnut and tiger nut cultivation.</p> | <p>N1d Soils dominated by ground water laterites rendering them imperfectly to poorly drained. May be developed for paddy rice cultivation or vegetation should be left for rough grazing by livestock.</p> |
| <p>S1b Have same characteristics as S1a above, but are situated in Savanna-transition vegetation zone. These areas are suitable for soybean, maize, yams, guinea corn, millet and groundnuts.</p> | <p>S3a May consist of heavy plastic clays mostly imperfectly to poorly drained soils good for mechanized irrigation of rice, sugarcane, vegetables, maize and millet.</p> | <p>S4d Soils are mainly loose sands developed on coastal sand dunes. Suitable for coconut cultivation. May be mixed with organic manure for vegetable cultivation as in Anloga areas.</p> | <p>N2 Very unsuitable areas for crop production. Soils are very shallow, gravelly, occurring on steep to very slopes. Should be reserved for forestry, wildlife and watershed protection.</p> |
| <p>S2 Suitable areas for extensive mechanical cultivation of export and food crops.</p> | <p>S3b Mostly alluvial soils suitable for maize, guinea corn and vegetables.</p> | <p>N1 Unsuitable areas for upland arable and tree crops.</p> | <p>D Very unsuitable areas for crop production. Soils are very saline and may be utilized for mining of edible salt.</p> |
| <p>S2a Crop suitability same as S1. Limitation to crop production may be due to gravelly subsoil horizons.</p> | <p>S3c Includes gravelly and moderately shallow soils. Could be hand cultivated for cassava, vegetables and maize.</p> | <p>N1a Predominantly poor to very poorly drained soils, which may be developed for rice, sugarcane and vegetables.</p> | |
| | <p>S4 Fairly to marginally suitable areas for the cultivation of crops.</p> | <p>N1b Terrace derived alluvial soils, which are dominated by rounded pebbles rendering them unsuitable for mechanized agriculture. May be suitable for maize, cassava, pepper cultivation.</p> | |
| | <p>S4a Consist of gravelly, moderately shallow to shallow, imperfectly drained soils. Limited to hand cultivation of cassava, citrus, palm oil and mangoes.</p> | | |



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